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Authentication Services for Public Libraries: A Report

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Summary

This document, which was commissioned by the MLA, provides a report on the feasibility of providing an authentication service for use by public libraries.

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1 Executive Summary

This report was commissioned for Museums, Libraries and Archives Council (MLA) in early 2010 and carried out between April and September 2010.

It should be noted that as this report was commissioned by MLA, it looks only at the situation in England. However, it is probable that these findings would be replicated in an examination of the situation in Scotland, Northern Ireland and Wales and consequently the findings of this report may be also be applicable to those countries.

Research for this report shows that while public libraries are typically offering access to online reference sources, only some are offering access to e-books and audio e-books at the present time. This is expected to change over time, as further authorities are already planning or implementing access to e-content. Access and authentication is an issue every authority needs to address and there is interest in the sector in moving to a simpler process.

Technical platforms, infrastructure and support vary from authority to authority. Thus technical matters may be handled in-house or be out-sourced under contract, and service level agreements are not always in place. Public library authorities do employ staff with a technical remit, but the extent of their role varies and level of technical expertise varies. This means no single technical start point can be identified.

The main points from this report are:

- There is a great deal of duplication of effort as public library authorities individually set up access and authentication arrangements with a common pool of suppliers.
- This duplication of effort means that direct (subscriptions) and indirect (library and IT department time for set-up) costs are replicated in each authority.
- The UK Access Management Federation (UK AMF) is operating successfully, and to the benefit of its members, in the HE/FE and schools sectors.
- Local authority departments are already joining UK AMF and putting authentication into place for their schools. Technically it would be possible to build on this set-up and extend the facility to public libraries.
- The UK AMF has extended its membership criteria to a new category which could include public libraries. The organisations that trialled this UK AMF membership extension are the British Library, the London Library and NHS Trusts. Setting up such a category would benefit the health sector and charities involved in research activity in addition to public libraries.
- Membership of the UK AMF and use of Shibboleth or Athens authentication has the potential to reduce costs for public libraries and also for publishers and suppliers of e-content.
- Membership of the UK AMF and use of Shibboleth or Athens authentication has the potential to simplify access to several groups of users of public library provided e-content: in particular, people who work/study and live in different library authorities and those whose place of residence changes frequently (e.g. members of the armed forces and their families and the traveller communities as well as students).
- Joining the UK AMF (once a membership category is available) and putting authentication technology into place is therefore the recommended way forward for public library authorities.
- Single sign-on requires (a) membership of the UK AMF, (b) a server certificate and (c) use of authentication such as Athens or Shibboleth.
- Currently no public library authority is a member of the UK AMF and it appears that no library authority is using Athens or Shibboleth technology. Ideally, a national strategy would phase in membership with a small set of pilot authorities, followed by a staged roll-out.

The conclusion is that a move to single sign-on authentication by public library authorities would benefit the authorities, their IT support, their users and the providers of e-content. Since authorities are at different levels of technical capacity, a national, phased strategy for public library authorities to move to single sign-on authentication needs to be developed (ideally in partnership with JISC) and some technical and administrative issues resolved in order for this to happen.

1.1 Recommendations

There is much potential benefit to public library services, their users and the publishers (providers) of e-content in moving to Single Sign-On (SSO) with Identity Provider (IP) and Service Provider (SP) authentication. Given the current varying technical capacity of individual public library services, such a move will take a period of years.

Recommendation 1: Develop a strategy for a phased move by public library services to single sign-on. The first phase would ideally comprise two or three public library authorities in each category (London borough, metropolitan and unitary authority). Subsequent phases could be regional in nature and/or dependent on the technological capacity of individual public library authorities.

There will also be a need to inform public library authorities, their IT support services and the publishers of e-content of the potential of using single sign-on authentication and documentation of processes and best practice in adopting SSO.

Recommendation 2: Develop a strategy to (a) promote, (b) detail processes and (c) provide best practice advice (including case study illustrations) the move by public library services to single sign-on using IP and SP authentication.

There is a JANET(UK) trial currently in progress with a local authority in Staffordshire enabling local authority staff to obtain server certificates on behalf of schools and other organisations in their catchment area. If the trial is successful, it is expected that the JANET Certificate Service would be rolled out and made available to all English local authorities and there will then be a need to provide guidance documentation.

Recommendation 3: Develop guidance documentation, including case studies (for example the Staffordshire authority involved in the experiment), for local authority IT staff on the process of obtaining server certificates on behalf of other departments.

With UK AMF membership eligibility criteria extended, charging models would be defined for the new member category, and new supporting documentation will be required.

Recommendation 4: Develop, in collaboration with JISC, supporting documentation for local authority libraries on the new membership category.

Limited information is available at present on public library use of JANET / SuperJANET connections and OpenAthens / Shibboleth authentication. It is believed that a few local authority libraries are signed up (e.g. Kent, Leeds and Shropshire from the case studies in section 9 of this report) to JANET / SuperJANET connections but no definitive list is available. In the case of OpenAthens / Shibboleth authentication it has not been possible to establish that any public library authorities are currently using these services. Libraries already using JANET/SuperJANET would be good candidates for trialling authentication services.

Recommendation 5: Establish which public libraries already use JANET/SuperJANET to identify potential candidates to trial OpenAthens/Shibboleth authentication.

1.2 Author Details

This report was written by Ann Chapman, UKOLN. The report was subsequently edited by Brian Kelly who deposited the report in Opus, the University of Bath repository.

2 Background to this Report

2.1 About This Document

This document provides a report on the feasibility of providing an authentication service for use by public libraries.

The report has been commissioned for MLA by David Potts.

3 What is Authentication?

Within today's online, networked environment, there are ever-increasing numbers of digital resources created by a range of publishers, including both commercial publishers and academic and research institutions. Libraries in both academic and cultural heritage sectors purchase and subscribe to digital materials but there are conditions attached regarding access.

These materials each come with restrictions set by the publisher, on who can access, how and for how long. Permitted access to a specific resource can vary from named users, through specific classes of users of different types, to access by anyone. The conditions that are applied to a specific resource are referred to as the '**authorization**'.

Authorization: the specification of who has access rights to resources.

Where access to a resource is restricted in some way (for example, only members of specific institution(s) may have access), a process is required whereby an individual gains access to that resource through being recognised via some form of identity verification as part of a group with access rights – this process is known as '**authentication**'.

Authentication: the process of establishing or confirming that someone's identity is real or genuine.

Authenticating someone's identity is therefore an integral part of the process for access control. Initially authentication was only required within an institution but the current situation is more complex and more fluid. The continued expansion and diversification of the digital publication sector has created an increasingly varied digital landscape, with more resources available in a wider range of formats. Alongside this, publishers are setting up licences (and fees) for increasing numbers of different user groupings. Institutional access is also changing: previously an individual would need to be physically within an institution to be able to access internal networks and the internet, whereas now members often access these from home or even while on the move, using laptops and mobile devices as well as desktop PCs. All of these factors have contributed to a corresponding need for authentication interaction beyond the institution.

4 Authentication within the UK HE/FE Sector

In considering the feasibility of providing an authentication service for use by public libraries, it is useful to examine the current situation in other sectors that also require access to digital resources with access restrictions and see whether experience and arrangements can be transferred to the public sector.

This section looks at the various issues relating to controlled access to e-content acquired by purchase or subscription and the methods by which this is achieved.

4.1 Authentication and Authorization

Authorization: specifying who has permission to access specific resources. Access permissions form part of the contracts between resource providers and subscribers and may be at the individual or class level. Examples are:

- a) individual level by personal subscription;
- b) class level for any member of an institution;

- c) class level for any member of a specific course or module of a course.

Authentication: verification of resource users either as individuals or as members of a class of user.

Controlled access to digital resources encompasses both authorization and authentication, although the latter term is sometimes used to reference both processes.

Authentication has been an essential element of digital resource provision within the UK HE/FE sector for some time now. The technical methods in use are changing in response to external factors, while the range of materials available for online access and the routes by which users wish to access those materials both now exist in far greater variety.

4.2 Multiple Usernames and Passwords

The earliest method of controlling access to digital resources was to issue 'username & password' combinations to individuals for their own use. A variation was to issue a limited batch of usernames & passwords to institutions or departments (e.g. the library); these were used as required via institutional networking. As resources proliferated, so did the number of username & password combinations an individual needed to use. This obvious limitation was a driver for a move to a single sign-on.

4.3 Single Sign-On

In the single sign-on (SSO) method of controlling access, a user logs in once to access all available systems or resources, without having to log in to each of them individually. (NB: simply using the same log in (e.g. for desktop and for email) is not single sign-on.) In order for SSO to be acceptable to digital resource providers and owners, there must be a robust authentication process or service. In the UK the HE/FE sector has been increasingly moving from multiple sign-on to SSO with authentication using either Athens or, more recently, Shibboleth.

For more information see: http://en.wikipedia.org/wiki/Single_sign-on

4.4 Access and Identity Management

Identity management (ID management) is an administrative function for identifying individuals in a system (such as an institution) and controlling their access to resources by associating user rights and restrictions with that established identity. Central to identity management are the Identity Provider (IdP) and the Service Provider (SP).

Individuals have their own user accounts managed by the IP. These accounts can be grouped into categories, with each category given access to different sets of resources available from a range of SPs.

4.5 Athens

Athens is an Access and Identity Management service, developed in the UK by Eduserv. This was a proprietary solution supplied by Eduserv¹ to provide single sign-on to protected resources combined with full user management capability. Athens operates independently of a user's location or IP address.

Local authorities and public library authorities can sign up to one of the Athens services. The annual subscription (plus VAT) would be negotiated between the individual authority and Eduserv, probably using a charging model based on the number of users.

Using Athens means that institutions could replace the multiple usernames and passwords necessary to access subscription based content with a single username and password entered once per session. The Athens interface prompts users for a username and password, and then uses that information to establish access to Athens-protected services.

The principal product is OpenAthens and two versions of the service are available – 'managed directory' and 'local authentication'. In addition, Eduserv also offers a service provider product.

OpenAthens MD (managed directory). This product is the successor to Classic Athens, *'providing a complete hosted service for the creation and management of user identities and entitlements for single sign-on access to resources'*. OpenAthens MD requires no technical integration by the customer (i.e. the institution or local authority) but they need to supply details about the users (usernames, passwords, etc.) who are going to be making use of the system. In the case of a public library, for example, this would be a list of their members in an electronic form.

OpenAthens LA (local authentication). Usernames are held locally and security tokens are exchanged via a range of protocols, for example. Security Assertion Markup Language (SAML), Shibboleth or Athens Devolved Authentication (AthensDA). OpenAthens LA requires integration with systems at the library or local authority, e.g. being hooked into a back-end LDAP directory. Eduserv can probably help with this.

Whichever service is chosen, Eduserv would expect a working system would be up and running reasonably quickly but cannot be more specific on timescale.

OpenAthens SP (service provider): this would allow public libraries and/or local councils to manage access to their own services (and e-content they have created) by others. The service is based on SAML / OpenID / Information Cards.

4.6 Shibboleth

Athens is not the only solution to the problem of multiple usernames and passwords and other countries have also been working on the issue of accessing multiple resources with a single identity.

Shibboleth² is the result of the Internet2 initiative in the USA and has become the most widely-adopted standards-based approach. Based on Security Assertion Markup Language (SAML), Shibboleth is a web-based technology for a federated identity-based authentication and authorization infrastructure. This federation approach allows cross-domain single sign-on and removes the need for content providers to maintain records of user names and passwords.

Shibboleth does not carry out authentication itself but instead defines a set of protocols for secure transfer of identity information between institutions and service providers. Institutions are responsible for authentication (establishing and managing identities), while service providers deal with rights management based on information about institutional affiliation.

Since authentication and rights management are carried out by IPs and SPs, using Shibboleth depends on a certain level of trust; service providers need to be confident that appropriate authentication systems are in place in institutions. This has led to the use of federations of similar organisations (e.g. universities) with an agreed common set of policies, usually established at national level. In the UK, there is the UK Access Management Federation for Education and Research (UK AMF). Examples of higher education federations elsewhere are InCommon (USA), SWITCHaai (Switzerland) and HAKA (Finland).

Shibboleth devolves all responsibility for user authentication to the user's institution. The information passed to the service provider is about status rather than personal identity and takes the form *'this user is a member of our institution'* or *'this user is a member of the psychology department of this institution'*.

4.7 Use of Athens and Shibboleth

Athens has been, and still is, used by many UK education sector institutions and JISC subscribed to Athens services on behalf of UK FE / HE for a period up to July 2008.

Athens is fully compliant with the UK AMF and remains an option for Identity Providers within the Federation. Institutions wishing to join the UK AFM and use the Athens route simply need to indicate this when they apply.

However, Shibboleth is now the frontrunner for the most widely adopted standards-based approach. Countries that have already adopted it or are in the process of doing so are Australia and, among several European countries, Switzerland, Finland and the Netherlands. A number

of commercial service providers are planning to create interfaces to their services using Shibboleth technology or already provide them.

In 2006 JISC established the UK Access Management Federation to provide UK universities, schools and colleges with educational access to resources using more sophisticated identity management solutions such as Shibboleth. The reasons for this are outlined in the following quote from a JISC Briefing Paper 'Shibboleth: Connecting People to Resources'³.

With Athens established as a successful solution, it is reasonable to ask why the UK should change. There are several reasons. Currently, in order to make their products available to the UK community, service providers have to implement Athens on their systems. The classic Athens system uses a separate identifier and password for remote resources. These may be difficult to remember alongside other, locally-used, usernames and passwords. The result is that these are either forgotten, reducing take-up of expensively acquired services, or are written down, compromising security. Shibboleth relies on locally-used identity credentials, which are also likely to provide access to personal information such as library holdings or email. These are much more likely to be remembered and kept confidential.

Finally, there are increasing demands for more sophisticated systems for enabling access to materials and resources driven by initiatives such as e-learning, regional collaborations, and multi-institutional projects. Shibboleth's flexible design provides a good basis for meeting these demands.

5 UK Access Management Federation

5.1 Funding

The UK Access Management Federation for Education and Research (UK AMF)⁴ is funded by JISC and Becta and operated by JANET(UK).

- JISC funding (for UK colleges and universities)
- Becta⁵ funding (for English schools but aggregated at the level of local authorities and regional broadband consortia (RBCs))

[Note 1: RCBs are now funded directly through the Department of Education]

[Note 2: It is unclear what effect the closure of Becta (announced as part of government spending cuts on 24 May 2010) will have.]

Those institutions that are designated 'funded members' (i.e. covered by the above funding agreements) may participate both as an Identity Provider (IdP) and as a Service Provider (SP) (e.g. a publisher or content provider).

Commercial organisations (e.g. publishers) may only participate as Service Providers (SP).

5.2 Join-up

A complete list of members of the UK AMF is now available from the Federation Web site⁶, although it should be noted that not all of these yet have a production system running.

In April 2010 it was reported that almost 800 members had joined the Federation. Of these, figures released in February 2010 showed that 166 Higher Education institutions and some 350 Further Education institutions were members⁷.

Simplified sign on is not confined to HE and FE; it is also a key issue for schools and Becta worked with JISC in setting up the Access Management Federation. A news item on the Becta

site⁸ notes that “a growing number of Regional Broadband Consortia (RBCs) and local authorities have also joined the Federation, thus helping schools to take advantage of simplified and secure access to online content and resources.” According to this report the Yorkshire and Humber Grid for Learning became the 300th member of the UK Access Management Federation in 2008.

A list of participating local authorities and RBCs who are members of the UK AMF (as at November 2010) is included in this report as Appendix 3.

The UK AMF Web site Info Centre section⁹ includes two case studies from local authorities (Leicestershire Library Services for Education and Worcestershire Local Authority) in addition to HE and FE examples.

5.3 Non-funded members

Initial research for this report found that publicly funded organisations, which are not designated as ‘funded members’ (i.e. not funded by JISC or Becta as noted above) were initially not able to participate as Identity Providers (IP). Public libraries fell into this excluded category.

Some local authorities have signed up as IPs on behalf of their schools, which are eligible as Becta funded members. Technically, where the local authority is willing and appropriate changes are made to settings and directories, it appears that public libraries could use the local authority as their IP.

On the question of eligibility, JISC has recently reviewed its policy and whilst this review was taking place, a trial membership scheme was piloted with several organisations (e.g. the British Library, the London Library, NHS Trusts). The outcome of the review was that the UK AMF eligibility policy was updated with new membership categories, to include public sectors organisations and others, including libraries¹⁰.

Eligibility for IDENTITY PROVIDER Membership

12. Two eligibility tests are applied as follows.

13. The organisation must be sponsored by a funding body (See note 4.); or

14. The organisation must have an education or research remit. (See note 5.)

Note 5. Examples of eligible bodies would be independent schools, colleges and universities, NHS trusts, museums, public libraries, the Ministry of Defence and government agencies. It should be noted that charges may be applied.

UK AMF Eligibility Policy, June 2010

There has been no further progress on a charging model for membership categories not supported by a funding body. It is anticipated that the UK AMF's Policy Board will look at this in the first half of 2011.

5.4 Further information

JISC has produced a useful set of documents about the Federation¹¹. These include:

- a roadmap¹²
- guides for institutions¹³
- guides for publishers and service providers¹⁴.

In addition, further useful information can be found on the JISC AFM blog¹⁵.

6 What are the advantages?

Federated access management, such as the Shibboleth technology, allows students and staff access to a wide-range of resources by using their institutional username and password. By moving the authentication process to an individual's home institution, further access management options become available.

- The same username and password is used for internal and external resources
- There is reduced administration of user accounts within institutional libraries
- Institutions can collaborate more effectively by allowing access to certain resources

According to the JISC guides, there are benefits to both institutions and users.

- User
 - single sign-on using an institutional ID and password
 - reduced risk of compromising accounts by writing down their username and password
 - personal data is not disclosed to third parties.
- Librarian
 - no need for username/password administration
 - new tools for managing licences and service subscriptions.
- IT Manager
 - in the long-term, more control over the access management process
 - in the short-term, more effort required for the transition period.
- Institution
 - a single service for e-learning, e-research and library-managed resources.
- Service provider
 - fine control of access at different levels (from institution-wide down to departmental or course level)
 - international standards and global take-up provide opportunity to develop a skills base on one technology for a range of customers
 - potential cost savings on subscription charges through increased choice of software (including open source)
 - potential for increased use of subscribed services.

7 Public Libraries – the Need for Authentication

Public libraries provide access to an increasing number of digital resources. A review of Web sites for public libraries in England was carried out in June 2010 for this report (see Appendix 1 for full details). The review reveals that (1) all public library services are providing access to a selection of online reference sources; (2) a smaller number of public library services are currently offering access to e-books; and (3) a few offer audio e-books. It is expected that the number of libraries offering access to these resources will rise over time, especially as personal ownership of new mobile devices increases.

Libraries purchase e-book content by time-limited contracts. Most such contracts are for periods of 1 to 3 years; if the contract is not renewed the resource (e-book or online reference) will disappear from the library's virtual stock.

7.1 Online reference resources

Subscriptions to online reference resources (or virtual reference collections) are for real-time direct access to the resource. Typically the license permits access via a jump-off link within the library Web site with the user permitted to access the resources from both library and home PCs. However, for a small number of e-resources (e.g. Ancestry) access is only permitted using library-owned PC's within the library building.

Typical acquisition method: subscription based on either population levels or concurrent users.

7.2 E-books and audio e-books

Subscriptions to e-books and audio e-books are most commonly for download onto hardware devices or PCs; alternatively, and far less often, texts are read online in real time or viewed (or listened to) via streaming. Downloads use digital rights management (DRM) technology and files destroy themselves after a set period of time (the equivalent of the loan period of a physical book).

Typical acquisition method: Purchase of a single user licence for each specific title. For popular titles, purchase of multiple single user licences is the digital equivalent of buying extra copies.

7.3 Authentication and the public library

Although e-resource delivery methods vary (real-time online, download and streaming), other factors do not. Public libraries providing these resources for their membership all purchase access to e-resources via subscriptions and control access by their users via authentication processes. However, their technical platform is part of the larger technical platform for their local authority, and many decisions and policies are set by their local authority IT department. A public library wishing to move to offering e-resources will need to work closely with its local authority IT department in setting up authentication processes.

In addition to duplication of effort at the library authority end of the process, there is further complication in how authentication of e-resources is handled by commercial suppliers. With regard to online resources, commercial suppliers (e.g. OUP) of e-content for public libraries often handle authentication using a barcode/PIN access code.

This can often be problematic, especially when a number of public library authorities send the supplier exactly the same numeric range of membership 'barcodes'. In order to deal with this clash, in some authorities (though not always for all resources) the barcode must be preceded by a (most usually 3 character) identifier for the specific library authority. Examples are:

- Ealing (prefix 'EAL'), Haringey (prefix 'HAR'), and City of London (prefix 'CLP').
- Havering uses the prefix 'havering' – note the use of the lower case initial letter.
- Tower Hamlets uses the prefix 'TH' for some resources

Since publishers are already set up for Athens/Shibboleth authentication and using it, for example, with academic sector organisations that purchase or subscribe to their products, a move by public libraries to single sign-on authentication via Athens/Shibboleth would simplify their processes and is likely to be welcomed.

It is clear that at present putting access and authentication into place is handled on a piecemeal 'authority-by-authority' basis, which inevitably leads to some duplication of effort. This makes a situation where:

- many public libraries will be subscribing to the same resources from the same service/product provider;
- some users are members of more than one public library;
- users may need to use a prefix for some resources but not others;
- service/product providers need to offer a variety of access and authorisation processes and technologies for different subscribers;

- public libraries and local authority funded schools may be subscribing to the same service/product from the same provider, but access and authentication processes are set up twice by both local authority and service/product provider.

A national approach to public library authentication would benefit public libraries, suppliers and users.

7.4 Authentication and the public library user

What is the user experience in gaining access to e-resources? This may not be as simple as it first appears. While the majority of public library users are only members of the public library run by their local authority, a small but significant number now join other libraries where this is permitted. In these cases, it would be possible for a user to have access to e-resources from another library when they are not provided by their 'own' public library. Users may also have access to some e-resources if they work in or study at a school, college or university. Consequently, a user may in fact experience having to use a number of identities either simultaneously or sequentially over a period of time for the following reasons.

- The public library has varying authentication in place depending on the service/product being accessed.
- The user is a member of more than one public library.
- The user is a member of one or more public libraries and is a member of the staff or student body of a school.
- The user is a member of one or more public libraries and an FE/HE institution.
- The user moves residence from one local authority to another.
- The user is a member of the armed forces (or a family member) stationed for varying periods in different local authority areas.
- The user is a member of the Romani / traveller community and stays in different local authority areas for varying periods of time.

For the user, there are currently variations in the access route and authentication login that must be used; this may even be the case within a single public library service. The variations a user may encounter are multiplied if they are a member of more than one public library.

The review of public library Web sites for this report indicates that typical methods in use are:

- library card number (or borrower number) from the link on a specific Web page (e.g. Bath, Hampshire, Wiltshire)
- local authority code (2 or 3 letters) plus borrower number from the link on a specific Web page (e.g. Surrey)
- library card number (or borrower number) plus PIN to login to access a specific area of the Web site, which then provides the jump-off link (e.g. Isle of Wight)
- library card number (or borrower number) plus PIN to login to library PCs to access some specific resources (e.g. Islington)

8 Public Libraries and the UK Access Management Federation

There are undoubted benefits to the public library sector using single-sign authentication.

- Users with multiple identities within a local authority (e.g. user of a public library and teacher or student at a local school) could have a single username/password.
- Potential for simplified administration for members of social groups with high mobility (e.g. armed forces, Romanies and travellers).
- Simplified username/password administration can be carried out by local authority IT department for both public library and local schools. This **may** result in lower internal

charges to schools and the public library for this work if the same process is used by both.

- New tools may be available for managing licences and service subscriptions
- Potential for different subscription models if publishers trust authentication process.
- A wider range of e-resources may be available if publishers trust the authentication process.
- Provide a key feature in the provision of an integrated national digital offer which would see public libraries moving to a 24/7 partnership with other services, including publishers, academic institutions, government services (proposal 36 in the DCMS *The Modernisation Review of Public Libraries: a policy statement*¹⁶).

This being the case, how might Public Libraries set about moving to single sign-on authentication via the UK AMF?

Can public libraries join the UK Access Management Federation at present?

Yes, public libraries can join the UK AMF. Currently, as they now qualify as Identity Providers under the new category', they would be offered trial membership (see section 4.3) until a charging model is established that would cover them. Once a charging model is in place, trial members would be given an extended notice period offering the option of continuing with an annual fee. The level of this fee has not been decided, but is thought likely to be in the range £500 to £1,500.

Do they need to sign up themselves or via their IT departments?

The UK AMF does not specify how they should join and either option is possible. However, the decision may actually lie with the local authority and/or its IT department.

Local authorities are already joining the UK AMF on behalf of their local schools.

"Current figures for join up are Scotland 100% and England 70%; Welsh authorities have yet to make a decision."

Telephone interview with Nicole Harris of JISC (June 2010)

If a local authority has already joined the Federation on behalf of its schools, the public library could use the same process as the local schools.

What software is needed?

An Identity Provider (IP) – the public library or the local authority IT department – needs to install and implement some SAML-compliant software, e.g. Shibboleth.

The requirement for SAML-compliant software does not restrict the Identity Provider to using Shibboleth; one of the Athens services may also be used. The actual software to be used must be stated at time of sign-up.

Once the organisation has joined the UK AMF, they can register their SAML-compliant system(s). Users can then begin to access federated resources using just the one set of log-in credentials which they have been allocated by their organisation.

How would public libraries sign up with UK AMF?

The documentation for the Federation notes that there are three ways in which an institution can join the Federation. The three routes are briefly described below, with their JISC identified costs and benefits, along with some additional comment relating to their suitability for public libraries. A fourth possible route – using the Government Gateway – is also described.

8.1 Become a full member of the UK Access Management federation, using open source software with in-house technical support

JISC identifies the Costs and Benefits as:

Costs: Institutional effort to implement software, join federation and enhance institutional directories.

Benefits: Full institutional control, skilled staff and access management solution for internal, external and collaborative resources.

Suitability for public libraries

This route requires a certain level of relevant technical skills, the man-hours to carry out the tasks and the administrative access permissions needed.

Whether and/or how many public libraries have the relevant technical skills, staff effort and administrative rights is not known. It is more probable that local authority IT departments would (or at least should be able to) do this on behalf of public libraries, especially since it is known that many are currently doing this on behalf of local authority schools.

With regard to open source software, IT departments may have strict rules about what can be used. However, given that the software in question is international standards-compliant, this should not be an issue.

While it is likely that the IT department would have the technical skills, other demands on their time may dictate the timescale for undertaking this work.

There may be an internal budget cost to the library if the IT departments charge other departments of their local authority for doing work on their behalf – this may be due to authority wide policy regarding inter-departmental charges and the detail of any service level agreements in place.

Conclusion: This route appears to be the best fit with known public library technical options.

8.2 Become a full member of the UK Access Management federation, using open source software with paid-for technical support

JISC identifies the Costs and Benefits as:

Costs: Cost of support from supplier and institutional effort in liaison with supplier and federation.

Benefits: Full support in implementation and access management solution for internal, external and collaborative resources.

Suitability for public libraries

All the points mentioned in option 1 apply to this route.

In addition, in the case of buying in technical support, public libraries will be constrained to work within their budgets and may also be prevented from buying in expertise from an external provider by their IT departments or local authority policies.

Conclusion: Budget limitations and or local authority/IT department policy may rule out the use of contracted external technical support as an option.

8.3 Subscribe to an 'outsourced Identity Provider' to work through the UK federation on your behalf. Institutions will however be required to join the UK federation if they wish to access JISC-funded resources.

JISC identifies the Costs and Benefits as:

Costs: Subscription costs to external supplier (from July 2008) and internal administrator role.

Benefits: Minimum institutional effort to achieve access to external resources only.

Suitability for public libraries

Limited budgets may rule out subscribing to an external Identity Provider but on the other hand it may be a cheaper option than using library staff (which in any case is dependent on the technical expertise being available).

If the decision rests with the local authority IT department, they may not wish – either for budgetary reasons or on principle – to take this work outside the local authority infrastructure.

Conclusion: It is not clear whether this is a viable option for public libraries.

8.4 Government Gateway

Another possible route would be to use the Government Gateway. So what exactly is the Government Gateway?

Government Gateway Web site¹⁷

The Government Gateway is the website you use to register for online government services. It is an important part of the government's strategy of delivering 'joined up' government, enabling people to communicate and make transactions with government from a single point of entry.

And

The Directgov Web site¹⁸

The Gateway has over 100 enabled services from over 50 government offices. If you are online to claim Child Tax Credit, pay a parking fine or check your pension entitlement, it's likely that you are using the Gateway. Sometimes you may not even know you are using it – departments often use their own branding.

There are plans to inter-federate the Government Gateway and the UK AMF. In this scenario, individuals who register with the Gateway would gain 'citizen' credential, with the Gateway acting as an Identity Provider.

How might this work? Nicole Harris, JISC Federation Services Manager, has suggested in the JISC Access Management Team blog¹⁹ that if citizen accounts hold some form of standard location information; in effect making the statement '*this person lives or works in a specific local authority area*', then it would be possible to authorise users against a regionally negotiated licence. She further notes '*This could be achieved with very little expenditure on technical infrastructure by libraries, local authorities or publishers, but would require a change in the way libraries negotiate licences.*'

How viable is this as an option? A variety of services can be accessed via the Government Gateway, from applying for a driving licence or your state pension forecast to (for three local

authorities only) dealing with your council tax. However, one council has taken a more inclusive approach.

Blaenau Gwent County Borough Council Citizen Account: A service for all individuals, businesses and organisations that deal with the Council. The Citizen Account collates information for each of the Council services that you interact with and presents it to you with the convenience of only requiring one user account to access each of these individual services. Registration can only be performed from the Blaenau Gwent CBC website.

It is likely that at present only a small number of individuals are registered with the Government Gateway. Although take-up will rise over time, it is difficult to predict how much and how fast this will be.

There are other issues to consider. While some people in older age-groups and lower income groups may register, many others may not and the notion that eventually everyone will be signed up is not possible in the short-term and probably unrealistic in the medium term.

The current focus of the Gateway does not include registration of children, who may well want to use e-resources.

If location information were to be a significant factor, then how would this impact on groups such as Romanies and travellers? If location is not a factor, this would make it easier for those groups to gain an identity, and potentially be able to use different public libraries as they move around, but then how licences are negotiated with content providers could be more problematic.

Conclusion: This could be an option for the long-term future, but it is likely that public libraries might wish to move forward before this becomes feasible.

8.5 JANET Server Certificates

The documentation indicates that local authorities would need acquire a JANET(UK) 'Server Certificate' as part of the process of joining the Federation. A server certificate is needed to enable secure exchange of user attributes, and there are many vendors from whom this can be obtained, see: <http://www.ukfederation.org.uk/content/Documents/GetCertificate> .

Currently, JANET primary customers can join the service and obtain certificates free of charge.

Once signed up to a vendor, it takes less than 48 hours to acquire a certificate. Commercial vendors will charge a reasonable fee (e.g. VeriSign offer £259 + VAT for their standard level 1 year certificate, Thawte SSL offer \$599 (excluding taxes) for a 1 year certificate). At present, the x.509 CA certificates recognised by the federation are:

- JANET Certificate Service certificates
- TERENA Server Certificate Service (TERENA SCS) certificates (for some non-UK European registrants)
- Thawte SSL web server certificates
- VeriSign Secure Site certificates

A trial is about to begin with a local authority in Staffordshire enabling local authority staff to obtain server certificates on behalf of schools and other organisations in their catchment area. If the trial is successful, it is expected that the JANET Certificate Service would be rolled out and made available to all English local authorities.

8.6 JANET connection

Local authorities are not required to have a JANET connection in order to acquire a Server Certificate.

However, having a JANET connection enables an organisation to access other useful JISC-run services, such as web filtering, video-conferencing services, data storage, etc. Full details can be found on the JISC service listing web pages²⁰, including a server certificate service.

Details on specific local authority and public library access to a JANET connection and services are not publicly available but correspondence with the UK Access Management Federation and JANET(UK) has provided the following information.

"While many of the public libraries are connected to JANET via their local authority connection, whether the library can use JANET depends on how the local authority has set up the network connectivity within their authority."

"All the local authorities have access to JANET for their schools but it is not possible for us to know if they also allow other traffic via this route."

Email from Shirley Wood, Head of Customer Engagement, JANET(UK)

And:

"At the time of writing, five public libraries have a sponsored connection to the JANET network via a JANET primary connection."

Email from: Simon Cooper, UK Federation Service Manager

8.7 Funding

With regard to signing up to the UK Access Management Federation, information for schools available on the Becta site²¹ indicates that local authorities have funding available under Standards Fund Grant 121a which could be used to support the work. However, this grant is ring-fenced as 'Additional Funding for developing and improving the National Digital Infrastructure for schools', with the remit 'As part of transforming learning and teaching through the effective use of technology, a further £41 million of capital is being allocated to local authorities this year to improve the National Digital Infrastructure for their schools.'

Schools will typically participate in the UK Access Management Federation via their regional broadband consortium or local authority - their identity provider. Local authorities and regional broadband consortia have been being invited to join the UK federation since 30 November 2006 and schools should contact their local authority or regional broadband consortium (RBC) for more information. If they have not yet done so, local authorities are encouraged to use their Standards Fund Grant 121 to put in place the necessary directory structure and services required to join the UK Access Management Federation.

If local authorities have already joined the UK AMF on behalf of their schools, there is potentially the opportunity for the public library services of those authorities to use the infrastructure set up for the schools. It is probable that some customisation and/or setting changes may be required but it is not possible to predict what work would be needed and what effort this would require – this is likely to vary from authority to authority.

9 Conclusions

9.1 Major factors identified

- There is a need for authentication services to enable public libraries to offer e-content to their users.
- Public library membership of the UK AMF would simplify the process for themselves, for their users and for the content providers.
- Currently authentication is carried out service-by-service using different methods resulting in a patchwork of practice.
- Putting authentication in place is currently not easy for public libraries
- Local authorities are already signing up to the UK AMF on behalf of their schools and colleges.
- Provision of technical support for public libraries varies as noted by respondents supplying information (see Appendix 2: Case studies)
 - Service Level Agreement with local authority & joint arrangement with another local authority & web site run by a third party
 - Council's Web Operations Team & Library Service IT supplier
 - Library service technical officer/team & Council IT team
 - Library service technical officer/team
 - Council IT team
 - Council IT team under Service Level Agreement

9.2 The way forward

- A national strategy would avoid piecemeal development.
- A national strategy would support the aim to provide a consistent service (i.e. a national offer) in every public library service across the country.
- Local authority sign-up to the UK AMF on behalf of public libraries as well as schools and colleges would be the most efficient route.

9.3 Costs

- The UK AMF now has a category appropriate for public libraries, but has not yet set the level of charges. However, it is estimated that the annual membership fee is likely to be in the range £500 to £1,500.
- JANET(UK) Server Certificates. This is a requirement of AMF(UK) membership. Costs of obtaining a certificate fall into three categories.
 - JANET(UK) primary customers – certificate is free.
 - JANET(UK) Certificate Service for local authorities. This is under trial at present and there is no information as to whether this will be a free or charged service.
 - From a commercial vendor, range from £300 to £500 for an annual certificate.
- Technical work on public library infrastructure: it is not possible to predict the costs as responsibility for this work varies from library to library – see point above regarding provision of technical support.

9.4 Timescale

- Obtaining a server certificate : up to 48 hours

- Participation in UK AMF is a two-step process:
 - Time to join the UK AMF, 1-2 days from receipt of membership letter
 - Up to 48 hours for members to register a SAML compliant (e.g. Shibboleth) system.
- Technical work on public library infrastructure: it is not possible to predict the timescale as responsibility for this work varies from library to library.

9.5 Recommendations

There is much potential benefit to public library services, their users and the publishers (providers) of e-content in moving to Single Sign-On (SSO) with Identity Provider(IP) and Service Provider (SP) authentication. Given the current varying technical capacity of individual public library services, such a move will take a period of years.

Recommendation 1: Develop a strategy for a phased move by public library services to single sign-on. The first phase would ideally comprise two or three public library authorities in each category (London borough, metropolitan and unitary authority). Subsequent phases could be regional in nature and/or dependent on the technological capacity of individual public library authorities.

There will also be a need to inform public library authorities, their IT support services and the publishers of e-content of the potential of using single sign-on authentication and documentation of processes and best practice in adopting SSO.

Recommendation 2: Develop a strategy to (a) promote, (b) detail processes and (c) provide best practice advice (including case study illustrations) the move by public library services to single sign-on using IP and SP authentication.

There is a JANET(UK) trial currently in progress with a local authority in Staffordshire enabling local authority staff to obtain server certificates on behalf of schools and other organisations in their catchment area. If the trial is successful, it is expected that the JANET Certificate Service would be rolled out and made available to all English local authorities and there will then be a need to provide guidance documentation.

Recommendation 3: Develop guidance documentation, including case studies (for example the Staffordshire authority involved in the experiment), for local authorities IT staff on the process of obtaining server certificates on behalf of other departments.

With UK AMF membership eligibility criteria extended, charging models would be defined for the new member category, and new supporting documentation will be required.

Recommendation 4: Develop, in collaboration with JISC, supporting documentation for local authority libraries on the new membership category.

Limited information is available at present on public library use of JANET / SuperJANET connections and OpenAthens / Shibboleth authentication. It is believed that a few local authority libraries are signed up (e.g. Kent, Leeds and Shropshire from the case studies in section 9 of this report) to JANET / SuperJANET connections but no definitive list is available. In the case of OpenAthens / Shibboleth authentication it has not been possible to establish that any public library authorities are currently using these services. Libraries already using JANET/SuperJANET would be good candidates for trialling authentication services.

Recommendation 5: Establish which public libraries already use JANET/SuperJANET to identify potential candidates to trial OpenAthens/Shibboleth authentication.

10 Appendix 1: Digital Resources offered by Public Libraries

In the past decade there have been many changes in the public library sector with a steady move out from the core of traditional services and towards taking advantage of the opportunities offered by the digital age. Although the public library sector has a long history of collaboration in some aspects (e.g. inter-library loans) this does not apply to all activity. Individual library authorities continue to draw up their own stock profiles and order their own stock (albeit often through contracted supplier services).

However, the stock profile in all public libraries has changed over time, reflecting the newer resource types now available. Stock was originally confined to books, serials (magazines), maps and sheet music; later recorded music and audio books (and sometimes toys and jigsaws) were added. Now digital materials, such as e-books and online resources, are also available.

10.1 Online reference resources

There is currently a change from just providing print reference materials to providing either both print and online versions, or simply the online version. Access to these is typically 'acquired' through annual (or longer fixed-term) subscriptions. To assist public libraries in dealing with a range of subscriptions, there is the MLA-brokered Reference Online²² service.

Reference Online is a subscription-based electronic service for English public libraries brokered by the MLA.

We have used the complex EU tendering procedures, to enable authorities to buy services from 22 suppliers who are now part of the Framework Agreement. They offer general reference material, online newspapers, and business and financial information. The Framework Agreement is available for use by English public libraries over a period of four years from April 2008 to March 2012.

Agreements have been secured for five product types: general reference, newspapers, business information, music & performing arts and children & young people.

10.2 E-books

Public libraries buy e-book content from publishers or third-party suppliers specifically for lending to the public, as a 'bundle' of titles under time-limited contracts of 1 to 3 years. If the contract is not renewed, that content disappears from the virtual library stock. Access to e-books is either by download (the most common delivery method for public libraries) or online.

Download. E-books are downloaded either onto hardware devices (e-book readers such as Amazon's Kindle, Sony's PRS-500, Bookeen's Cybook Gen3 and Cybook Opus) or PCs and mobile devices (e.g. Apple's iPad) with the relevant application software. Using digital rights management (DRM) technology, the file destroys itself at the end of the 'loan' period (usually 3 weeks). Licences are for single user access; multiple licences are in effect 'copies', each for single user access.

Online. E-books are accessed as if they were a reference work. The subscription is based on population, so allowing multiple concurrent users.

10.3 Digital audio books

Audio books are also available for streamed listening.

10.4 Who is Offering What Service?

A survey of English public library Web sites was carried out in May and June 2010. The survey looked at which libraries were offering access to online reference sources and e-book and audio e-books downloads from home computers.

The survey was conducted by visiting the Web sites of each of the English public library authorities and noting which online reference sources and e-books were offered by that authority and how access was offered.

An important finding was that the survey revealed that public library Web sites vary greatly in what information is presented and what sub-section headings are used. Links to online reference holdings were variously titled 'online reference library', 'library online resources', 'online reference resources', 'information services and online resources' and '24 Hour library'. In some cases, the user must follow an 'information services' link before finding out that online reference resources are available.

The 'discoverability' level of the various e-resources may therefore mean that the figures below under-represent the actual provision levels.

- Access to online reference sources is offered in at least:
 - 33 out of 34 London boroughs (it is likely that the remaining borough also offers these items but it has not been possible to verify this)
 - All Metropolitan authorities
 - All County & Unitary authorities
- E-books available for download in at least:
 - 10 out of 34 London boroughs
 - 3 out of 36 Metropolitan authorities
 - 11 out of 80 County & Unitary authorities
- Audio e-books available for download in at least:
 - 9 out of 34 London boroughs
 - 2 out of 36 Metropolitan authorities
 - 12 out of 80 County & Unitary authorities

11 Appendix 2: Case Studies

In addition to the survey of Web sites, sixteen public library authorities were contacted directly and asked to answer a set of questions about their provision of e-content and authentication procedures. Nine authorities replied and their answers are included below.

The most significant point to note is that each authority has had to make individual arrangements with suppliers and often with their own IT departments.

11.1 Case Study Questions

QU.1 What e-content do you currently provide?

1a. Online reference

1b. E-books

1c. Audio e-books

QU.2 Who (library technical staff or local authority IT department) carried out the technical work needed to support access to these resources? [*While this was about set-up, some responders interpreted it as about day-to-day support.*]

2a. Do you know how much effort this required (in days)?

2b. What was the Implementation timescale?

QU.3 Did this require use of a technology such as Athens or OpenAthens or Shibboleth?

3a. If yes, which technology did you use?

QU.4 Do you (or the local authority) have use of the JANET network?

QU.5 Do you know if your local authority has already signed up to the UK Access Management Federation on behalf of local schools?

5a. If they have, is the public library able to also use the same infrastructure and directory services?

QU.6 If technical work is done on your behalf by the local authority IT department, do they charge the public library for this work?

11.2 Bristol City Libraries

Bristol City Libraries ICT is managed centrally through its own in-house service. However, the library management system is provided through the LibrariesWest Consortium in Somerset Council. User access to e-content varies depending on the supplier and their many license and technical idiosyncrasies.

- *Access via Council network from public access PCs and staff PCs*
 - Usually supplier allows unchallenged access as supplier knows firewall IP address and referral URL.
 - Sometimes they also require Library borrower number
- *Access from home*
 - Some suppliers accept just the referring URL and the library borrower number
 - Other suppliers require authenticated users; this is done through our LMS web service (Axiell Galaxy Viewpoint). Users login to their LMS account and then launch into the e-content service from the link on the page.

Current provision of e-content: Online reference and audio e-books.

Technical work to support access: Depended on access/authentication model:

Access via Council website:

- All we needed was the Corporate ICT network staff to give us the firewall address IP ranges and the web editors to update the launch page for the referring URL.
- No additional cost

Remote access via LMS

- The LMS Systems Manager in Somerset County Council setup the pages and referring URLs
- No additional cost

Effort required: Experience has shown there are just as many technical problems and lack of knowledge at the supplier end as well as at Corporate ICT end. There's no single answer – anything from no time to weeks of elapsed time.

Implementation timescale: As above, time varied.

Single sign on (Athens/OpenAthens or Shibboleth)? No. Single sign-on would be great if we could get this to work across everything, i.e. LMS account as well as e-content providers.

Use of the JANET network? Yes, Schools have access but public libraries don't.

Local authority sign-up to UK Access Management Federation for local schools? Don't know.

Libraries and schools share the same ICT infrastructure but Libraries do not have access to JANET.

Local authority IT department charges? Yes.

Information supplied by Stan Tattersall, ICT Development Manager, Bristol City Libraries

11.3 Dorset

Current provision of e-content:

1a. Online reference: a range of resources.

1b. E-books: A comprehensive collection across all age ranges including graphic and Manga provided by Overdrive. The library website also has links to 3 free sites for e-books.

1c. Audio e-books: A comprehensive selection across all age ranges provided by Overdrive.

Technical work to support access: A joint effort from library technical staff and the IT department.

Effort required: It took months rather than days because, as Overdrive is run through our website, it had to be DDA compliant. There were also hold-ups with procurement and the legal team who wanted the contract in English law not American.

Implementation timescale: Much delayed as above but Overdrive were superb. Once up and running a "soft" launch for a month to test the technology then a major media campaign.

Single sign on (Athens/OpenAthens or Shibboleth)? No.

Use of the JANET network? No.

Local authority sign-up to UK Access Management Federation for local schools? Not known.

Local authority IT department charges? No, but we are currently having very little technical support due to staff vacancies and several large IT projects.

Information supplied by R.I. Sharpe, Stock Manager, Dorset Libraries.

11.4 Kent Libraries

Current provision of e-content:

1a. Online reference: Yes. Details of the resources provided can be seen from www.kent.gov.uk/online_referencelibrary (select each subject area in turn)

1b. E-books: Yes. Suppliers currently used are dawsonera and Overdrive.

See

http://www.kent.gov.uk/leisure_and_culture/libraries/online_library_services/ebooks_and_eaudiobooks.aspx

1c. Audio e-books: Yes, via Overdrive (link as above).

Technical work to support access: The Information Services Team usually handle most of the work relating to the online reference resources (The Library Systems and Corporate IT Teams only gets involved if any software needs to be installed, our PC's build need to be modified or the firewall is an issue). Currently authentication for most of them is done by the suppliers using borrower card number ranges or require users to first register on a library PC to create their own login ID and password (e.g. Fast Tomato and dawsonera). Overdrive uses a SIP2 connector to the Library Management System.

Effort required: This varies from a couple of days when straightforward to 10 days (7 days of IT time + internal testing) for eBooks/eAudiobooks. This only relates to access arrangements, additional time is taken by negotiations, project planning, research, checking and loading of catalogue records (as relevant), training, marketing and promotion etc.

Implementation timescale: Different for every product.

Single sign on (Athens/OpenAthens or Shibboleth)? No.

Use of the JANET network? Yes. Both staff and public PCs are on SuperJANET (using separate lines).

Local authority sign-up to UK Access Management Federation for local schools? Yes. The Corporate IT Team has no problem with our using this though the Active Directory for Adult element has not been implemented/costed.

Local authority IT department charges? Yes.

Information supplied by Christel Pobgee, Information Services Manager, Kent Libraries and Archives

11.5 Leeds

Current provision of e-content: Online reference, E-books.

Technical work to support access: Library technical staff.

Effort required: None, as the access to online reference resources has been in place for a few years and is building year on year. Support for online resources can be a problem as suppliers sometimes change URL without letting us know beforehand so we don't know that links are broken until a customer complains. Also they are not consistent in the way they require authentication. (Mostly by borrower number but some by IP range) E-books probably one day [effort] for the library technical set up.

Implementation timescale: Online reference has been added to over a few years, E books took about 3 months from completion of order.

Single sign on (Athens/OpenAthens or Shibboleth)? No.

Use of the JANET network? Yes.

Local authority sign-up to UK Access Management Federation for local schools? Don't know.

Local authority IT department charges? N/A.

Information supplied by Sandra Sharp, Libraries IT Development Manager, Leeds City Council

11.6 Luton Culture

Luton Libraries are part of Luton Cultural Services Trust, a charity delivering cultural services on behalf of Luton Borough Council. Luton Libraries have an SLA with LBC for the provision of IT services, such as support for staff and public computers, network and Internet access. Luton Libraries have a joint arrangement with Bedford Borough for the provision of library support services (acquisitions, cataloguing) and library management system. The Principal Librarian for

Information Services and E-Delivery has to balance the needs of the library service in terms of IT and electronic access, against a Corporate IT department in Luton and another IT department in Bedford.

Additionally, Luton Cultural Services Trust now has its own web site, run by a third party.

Current provision of e-content: Online reference, E-books, Audio e-books.

Technical work to support access: for access to online information sources, it is usually the Principal Librarian sorting out any issues with the company providing the information. For e-books and e-audio-books, the library is using Overdrive as a platform. In order to get the SIP2 connection working, colleagues in Bedford were asked to provide access, which they did – sorting out the parameters of the SIP connection. Usually for an online information resource it only takes a couple of hours to sort out.

Effort required: to get Overdrive to work took about 3 days of staff time. It is now working fine.

Single sign on (Athens/OpenAthens or Shibboleth)? We do not use any sort of single sign in.

Use of the JANET network? Luton Adult Education uses JANET. I understand that the local authority is considering JANET for schools. Luton Borough Council IT services may be outsourced later this year and this may affect what options there are, as there is an SLA with LBC that ties the library in. Luton Cultural Services Trust could perhaps consider JANET, however, due to current financial and staffing limitations this is not likely in the near future.

Local authority sign-up to UK Access Management Federation for local schools. Not aware that Luton Borough Council has signed up to UK Access Management Federation

Local authority IT department charges? There is an SLA with the borough's IT department. If technical work is required which is part of the SLA, the library would not be charged. If it is over and above the SLA, the library would have to find some funding.

Another point to make is that (some) local authorities seem to be becoming very strict over access to their systems – because of the Government Code of Connection. This was the issue with accessing Overdrive, which comes via the library management system in Bedford rather than through Luton IT.

Information supplied by Lucy Cross, Principal Librarian, Information Services and E-Delivery, Luton Culture

11.7 Manchester Libraries

Current provision of e-content: Online reference (19 resources). Audio e-books - Overdrive audio e-books service to be launched soon.

Technical work to support access: Library technical staff

Effort required: Varies according to resource being set up - impossible to give average figure

Implementation timescale: Online reference resources took a few weeks to set up. Overdrive has been longer.

Single sign on (Athens/OpenAthens or Shibboleth)? No

Use of the JANET network? No.

Local authority sign-up to UK Access Management Federation for local schools? Not known.

Local authority IT department charges? No. All technical work done by the library service

Information supplied by Andrew Jackson, Andrew Jackson, Systems & Technology Manager, Manchester Libraries

11.8 Shropshire Libraries)

Current provision of e-content: Online reference.

Technical work to support access: Local authority IT department.

Effort required: Less than 1 hour.

Implementation timescale: To coincide with updated library online pages due to system upgrade.

Single sign on (Athens/OpenAthens or Shibboleth)? No.

Use of the JANET network? Yes.

Local authority sign-up to UK Access Management Federation for local schools? Yes. The public library is able to use the same infrastructure and directory services.

Local authority IT department charges? Work done under Service Level Agreement.

Information supplied by Chris Stephens, Library System Support Officer, ICT Services, Shropshire Council

11.9 Surrey Library Service

Surrey has struggled with authentication, and at the moment we ask suppliers to authenticate for us. We'd be very interested in anything that came out of your work. It makes an awful lot of sense to find a common solution. We're getting more and more digital resources, the problem is only going to grow larger.

Current provision of e-content: Online reference, E-books, Audio e-books.

1a. Access to online reference (e.g. Encyclopaedia Britannica) – see:
<http://www1.surreycc.gov.uk/libraries/reference/>

1b. E-books: Yes, starting 5 July, from Overdrive. See <http://ebooks.surreycc.gov.uk/0833506A-A5EF-4751-8934-38D0048660AA/10/596/en/Default.htm>

1c. Audio e-books: as per 1b

Technical work to support access: Council's Web Operations Team (created .asp page for reference resources, shell for Overdrive pages)

Library Service IT supplier, Axiell (integration with LMS, authentication)

Effort required: Not known. Work has taken place over the past few years - original setup would have taken a lot of project work.

Implementation timescale: for Overdrive - whole project took three months, technical side probably a few days.

Single sign on (Athens/OpenAthens or Shibboleth)? No. Authentication for Overdrive is via Axiell and for online subscription databases via the individual suppliers.

Use of the JANET network? No.

Local authority sign-up to UK Access Management Federation for local schools? I haven't been able to find anybody to answer this for me. It's unlikely, as the Surrey schools contract is largely outsourced.

Local authority IT department charges? Our technical work is carried out by our third party IT supplier, Axiell. Small quantities of development work fall within our contract. Larger projects are charged for by the day.

Information supplied by Helen Leech, Virtual Content Manager, Surrey Library Service

11.10 Wiltshire Library Service

Current provision of e-content: Online reference, E-books, Audio e-books.

1a. Online reference. We subscribe to 21 resources. Two of these must be accessed via a PC in the library.

1b. E-books: We do not subscribe to an e-book service

1c. Audio e-books: We do not subscribe to a downloadable audio e-book service however Naxos Spoken Word Library provides streamed access to audio e-books.

Technical work to support access: Initially faults are reported to me (Information Services Manager for the Library Service) If the fault is with the supplier I will contact them direct, if it is an internal problem I will pass it to the council IT Team.

Effort required: I cannot provide an accurate answer to this as it varies so much, if they all run smoothly then it can involve very little work, however if we have a lot of problems it can take considerably more of my time.

Implementation timescale: These resources took varying amounts of time to implement and have been bought over a period of years so it is not possible to answer this with any degree of accuracy.

Single sign on (Athens/OpenAthens or Shibboleth)? No.

Use of the JANET network? No.

Local authority sign-up to UK Access Management Federation for local schools? Not known.

Local authority IT department charges? No charges for work done.

Information supplied by Abby Moore, Information Services Manager, Libraries, Heritage and Arts, Department of Community Services, Wiltshire Council

12 Appendix 3: Participating English Local Authorities and Regional Broadband Consortia who are Members of the UK Access Management Federation

The following English Local Authorities and Regional Broadband Consortia are members of the UK Access Management Federation:

- Birmingham City Council
- Blackburn with Darwen Borough Council
- Bolton Metropolitan Borough Council
- Bracknell Forest Borough Council
- City of Bradford Metropolitan District Council
- East of England Broadband Network
- EMBC Procurement Limited
- Hampshire County Council
- Kent County Council
- Leeds City Council
- Leicestershire County Council
- Norfolk County Council
- North West Learning Grid
- Sandwell Metropolitan Borough Council
- Somerset County Council
- South West Grid for Learning Trust
- Telford & Wrekin Council
- Warwickshire County Council
- Worcestershire County Council
- YHGfL Foundation

Data correct on 9th November 2010

13 Individuals Contacted

The following people were contacted in the preparation of this report.

Simon Cooper	UK Federation Service Manager
Lucy Cross	Principal Librarian, Information Services and E-Delivery, Luton Culture
Nicole Harris	JISC Federation Services Manager
Andrew Jackson	Systems & Technology Manager, Manchester Libraries
Helen Leech	Virtual Content Manager, Surrey Library Service
Abby Moore	Information Services Manager, Wiltshire Libraries
Christel Pobgee	Information Services Manager, Kent Libraries and Archives
Andy Powell	Eduserv
Sandra Sharp	Libraries IT Development Manager, Leeds Libraries
Robert Sharpe	Stock Manager, Dorset Libraries
Chris Stephens	Library System Support Officer, Shropshire Libraries
Stan Tattersall	ICT Development Manager, Bristol City Libraries
Shirley Wood	Head of Customer Engagement, JANET(UK)

¹ Eduserv: Access and Identity Management <http://www.athensams.net/>

² Shibboleth <http://shibboleth.internet2.edu/>

³ Shibboleth: Connecting People to Resources. JISC Briefing Paper February 2006.
http://www.jisc.ac.uk/uploaded_documents/JISC-BP-Shibboleth.pdf

⁴ UK Access Management Federation <http://www.ukfederation.org.uk/>

⁵ Becta <http://www.becta.org.uk/>

⁶ UK Access Management Federation: List of members
<http://www.ukfederation.org.uk/content/Documents/MemberList>

⁷ UK Access Management Federation join-up figures: <http://access.jiscinvolve.org/about/>

⁸ Becta Web site: Yorkshire and Humber Grid for Learning joins UK Access Management Federation
<http://industry.becta.org.uk/print.cfm?resID=36194>

⁹ UK Access Management Federation Web site: Info Centre section
<http://www.ukfederation.org.uk/content/Documents/CaseStudies>

¹⁰ UK Access Management Federation Eligibility Policy
<http://www.ukfederation.org.uk/library/uploads/Documents/EligibilityPolicy.pdf>

¹¹ Federated Access Management: Briefing papers
http://www.jisc.ac.uk/publications/briefingpapers/2008/pub_accessmanagementbps.aspx

¹² Federated Access Management: A Roadmap
<http://www.jisc.ac.uk/media/documents/publications/bpfamroadmapv2.pdf>

¹³ Federated Access Management: JISC Guide for Institutions
<http://www.jisc.ac.uk/media/documents/publications/bpfaminstitutionsv3.pdf>

¹⁴ Federated Access Management: JISC Guide for Publishers and Service Providers
<http://www.jisc.ac.uk/media/documents/publications/bpfampublishersv3.pdf>

¹⁵ JISC FAM blog <http://access.jiscinvolve.org/>

¹⁶ DCMS *The Modernisation Review of Public Libraries: a policy statement*, DCMS, March 2010.
ISBN: 9780101782128

¹⁷ Government Gateway Web site <http://www.gateway.gov.uk/>

¹⁸ Directgov Web site. *What is the Government Gateway?*

http://www.direct.gov.uk/en/Diol1/DoltOnline/Doitonlinemotoring/DG_10035603

¹⁹ JISC Access Management Team Blog. *FAM for Public Libraries*. Posted 12 March 2010.

<http://access.jiscinvolve.org/wp/2010/03/12/>

²⁰ JISC JANET Services Portfolio listing: <http://www.ja.net/services/service-listing.html>

²¹ Becta Web site: <http://schools.becta.org.uk/index.php?section=lv&rid=11277>

²² Reference Online <http://www.mla.gov.uk/what/support/online>